BIM CLASH DETECTION SERVICE PROVIDERS IN NORTH CAROLINA

A Complete Guide to BIM Clash Detection, Coordination & Leading AEC Service Providers Across the Tar Heel State

2025 EDITION | FEATURING TEJJY INC.

Featured Provider: Tejjy Inc. — 8(a) Certified Women-Owned BIM firm delivering clash detection, MEP coordination, and full-lifecycle BIM services across North Carolina.

50+ Active Providers	Charlotte · Raleigh Durham · Greensboro	Revit · Navisworks BIM 360 · Synchro
NC BIM Market	Key Cities	Top Software

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1. Introduction to BIM Clash Detection

Building Information Modeling (BIM) clash detection is a critical process in modern construction and engineering that identifies conflicts between different building systems before physical construction begins. In North Carolina's rapidly growing construction sector — driven by major infrastructure investments, research triangle expansion, and booming commercial development — BIM clash detection has become an essential service for project success.

Clash detection involves the automated analysis of 3D BIM models to identify spatial conflicts, such as when an HVAC duct intersects with a structural beam, or when plumbing runs through a wall designated for electrical conduits. By resolving these clashes during the design phase, project teams across North Carolina save significant time, money, and avoid costly rework during construction.

> **What is BIM Clash Detection?**
> BIM clash detection is the process of using specialized software to automatically identify geometric conflicts and coordination issues between different building systems — structural, mechanical, electrical, plumbing, and architectural — within a 3D digital model, enabling teams to resolve issues before construction.

North Carolina's construction industry has seen rapid adoption of BIM technology, particularly as public and private project owners increasingly mandate BIM on large-scale projects. The state's leading urban centers — Charlotte, Raleigh, Durham, and Greensboro — host a growing ecosystem of BIM service providers, offering everything from basic clash detection reports to full multi-disciplinary coordination and 4D construction sequencing.

2. Why BIM Clash Detection Matters for NC Projects

North Carolina ranks among the fastest-growing states in the US, with billions of dollars invested annually in commercial, residential, healthcare, and infrastructure projects. As project complexity increases, so does the risk of coordination failures — making BIM clash detection an invaluable tool for NC's AEC community.

Benefit	Impact on NC Projects	Estimated Savings
Early Conflict Resolution	Eliminates design errors before construction	Up to 10% project cost
Reduced RFIs	Fewer requests for information during construction	30–50% reduction
Schedule Optimization	Avoids construction delays from rework	2–4 weeks per project
Improved Safety	Identifies hazardous spatial conflicts early	Significant risk reduction
Better Collaboration	Aligns all trades on a single federated model	Higher project satisfaction

3. Types of Clash Detection in BIM

BIM clash detection is not a one-size-fits-all process. North Carolina service providers typically offer several types of clash detection based on project needs:

Hard Clashes	The most common type — occurs when two building elements physically occupy the same space. Example: a structural column intersecting with a mechanical duct. Hard clashes are detected automatically by software and require immediate resolution.
Soft Clashes	Involves clearance violations — elements don't physically touch but are within a specified minimum distance required for maintenance, installation, or safety. Example: insufficient clearance around an electrical panel for code compliance.
Workflow / 4D Clashes	Time-based clashes that occur when construction sequencing creates conflicts. Example: formwork installation scheduled at the same time as steel erection in the same area. Detected using 4D BIM simulations with tools like Synchro or Navisworks.
Duplicate Clashes	Identified when two identical elements are modeled in the same location — a common modeling error in large federated BIM models involving multiple disciplines.

4. Key Software Platforms Used in NC

North Carolina BIM service providers use industry-leading software platforms to deliver clash detection and coordination services. The following tools are most widely adopted across the state's AEC community:

Software	Developer	Primary Use	Adoption in NC
Autodesk Navisworks	Autodesk	Clash detection, 4D simulation, model aggregation	**Very High**
Autodesk Revit	Autodesk	BIM authoring, coordination, design	**Very High**
Autodesk BIM 360 / ACC	Autodesk	Cloud collaboration, issue tracking	**High**
Trimble Tekla	Trimble	Structural BIM, steel detailing	Moderate
Synchro Pro	Bentley	4D construction scheduling	Moderate

Solibri Model Checker	Nemetschek	Quality assurance, rule-based checking	Growing

5. SPOTLIGHT: TEJJY INC.

Featured BIM Clash Detection Provider in North Carolina

Tejjy Inc. is a nationally recognized, 8(a) Certified Women-Owned Small Business (WOSB/MBE/DBE/WBE) specializing in engineering design solutions and BIM services. With over **19 years of BIM delivery experience**, Tejjy Inc. brings world-class clash detection and multi-disciplinary coordination capabilities to construction projects throughout North Carolina — from Charlotte and Raleigh to Durham, Greensboro, and beyond.

Website: www.tejjy.com

8(a) Certified	WOSB	MBE / DBE / WBE	ISO 9001:2015	GSA-Ready

Tejjy Inc.'s BIM Clash Detection Services in North Carolina

Tejjy Inc. provides structured, governance-led BIM clash detection as part of a comprehensive suite of virtual design and construction (VDC) services tailored to North Carolina's diverse construction market. Their approach combines reality-capture technology with disciplined BIM coordination workflows to deliver clash-free, construction-ready models:

■ Clash Detection & BIM Coordination

Federated BIM model creation integrating architectural, structural, and MEP disciplines, with automated and manual clash detection runs generating detailed clash reports, BCF files, and coordination matrices for all project stakeholders.

■ Point Cloud to BIM / Scan-to-Revit

High-precision laser scanning with millimeter accuracy for existing structures and renovation projects across NC. Tejjy converts 3D point cloud data into clean, coordinated Revit BIM models — a critical first step for accurate clash detection on retrofit and renovation projects.

■ MEP Coordination & Routing

Detailed mechanical, electrical, and plumbing coordination with conflict-free routing, maintenance clearance verification, and code compliance checking — Tejjy runs structured clash detection before trade packages are locked to protect project schedules.

■ 4D & 5D BIM Services

Integration of BIM models with construction schedules (4D) and cost data (5D) to identify time-based workflow clashes, optimize construction phasing, and maintain cost visibility throughout the project lifecycle.

■ **As-Built Documentation**

Verified as-built BIM documentation for closeout and owner turnover, ensuring facility managers have accurate, coordinated record models reflecting field-installed conditions.

■ **BIM Execution Plan (BEP) Development**

Project-specific BIM Execution Plans defining modeling standards, LOD requirements, clash detection protocols, and data exchange formats — formatted for Revit, IFC, DWG, and PDF workflows.

Why NC Project Teams Choose Tejjy Inc.

Credential / Capability	Detail
19+ Years Experience	Deep BIM delivery expertise across complex healthcare, institutional, and commercial project types
ISO 9001:2015 Quality System	Repeatable, auditable workflows ensuring consistent deliverable quality on every NC project
8(a) & GSA-Ready	Qualified for federal and public-sector NC projects through GSA schedules and 8(a) program capabilities
Dedicated Project Team	Coordination managers and discipline leads assigned per project — not a generalist pool
NC Market Expertise	Proven experience supporting NC healthcare expansions, institutional campuses, and infrastructure corridors
Full Format Compatibility	Deliverables formatted for Revit, IFC, DWG, and PDF — compatible with all major NC AEC workflows

Connect with Tejjy Inc. for Your North Carolina BIM Project

Whether you're managing a hospital renovation in Charlotte, a university campus expansion in Raleigh, or a data center build in the Research Triangle, Tejjy Inc.'s clash detection and BIM coordination team is ready to support your project from preconstruction through closeout.

Visit: www.tejjy.com **Services:** BIM Clash Detection | MEP Coordination | Scan-to-BIM | 4D/5D BIM | As-Built Documentation

6. Leading BIM Clash Detection Service Providers in NC

Beyond Tejjy Inc., North Carolina is home to a diverse and growing network of BIM service providers specializing in clash detection and multi-disciplinary coordination. Below is an overview of the main categories of service providers operating across the state:

1. Large AEC / MEP Engineering Firms

Locations: Charlotte, Raleigh, Durham

Services: Full-service BIM coordination, clash detection, constructability review, 4D simulation

Key Sectors: Healthcare, Education, Commercial, Data Centers

These firms often have dedicated BIM/VDC departments with 10–50+ BIM specialists. They handle entire project lifecycle from design through construction coordination.

2. Specialized BIM/VDC Outsourcing Firms

Locations: Research Triangle, Charlotte Metro

Services: Clash detection as a service, LOD modeling, federated model management, BCF reporting

Key Sectors: Commercial, Industrial, Infrastructure

Focused exclusively on BIM services, these firms serve general contractors, MEP engineers, and owners who need dedicated coordination support.

3. General Contractors with VDC Teams

Locations: Statewide (major GCs in Charlotte, Raleigh)

Services: In-house VDC/BIM coordination, subcontractor coordination, clash resolution workshops

Key Sectors: All construction sectors

Many of NC's top GCs — including regional offices of national firms — maintain robust in-house VDC teams that provide clash detection as part of preconstruction services.

4. Architecture & Design Firms with BIM Capabilities

Locations: Charlotte, Raleigh, Asheville, Greensboro

Services: Architectural BIM authoring, interdisciplinary coordination, clash review during design

Key Sectors: Civic, Education, Residential, Mixed-Use

Architecture firms with advanced BIM capabilities provide early-stage coordination and clash detection during design development and construction documentation phases.

5. Specialty Trade Subcontractors (MEP BIM) Locations: Statewide

Services: MEP coordination drawings, trade-specific clash detection, as-built BIM models

Key Sectors: Industrial, Healthcare, Commercial

Mechanical, electrical, and plumbing subcontractors increasingly offer BIM coordination as a value-added service, producing highly detailed trade models for clash resolution.

7. Services Offered by NC BIM Providers

BIM clash detection service providers in North Carolina — including Tejjy Inc. — offer a comprehensive range of coordination and virtual design services tailored to project size, complexity, and client requirements:

Clash Detection & Reporting

Automated and manual identification of hard, soft, and workflow clashes with detailed BCF or PDF clash reports, categorization by discipline, priority, and resolution status.

Federated Model Management

Aggregation of discipline-specific BIM models (architectural, structural, MEP) into a single coordinated federated model for holistic review.

4D BIM Simulation

Integration of construction schedules with 3D BIM models to simulate construction sequencing, identify time-based conflicts, and optimize phasing plans.

MEP Coordination

Detailed coordination of mechanical, electrical, and plumbing systems — the most clash-prone building systems — including routing optimization and code compliance checking.

Constructability Review

Analysis of BIM models for practical construction challenges, access requirements, equipment hoisting, and sequencing logistics.

BIM Execution Plan (BEP)

Development of project-specific BIM Execution Plans defining modeling standards, LOD requirements, coordination workflows, and data exchange protocols.

8. Industries Served Across North Carolina

North Carolina's diverse economy drives demand for BIM clash detection across multiple construction sectors. Tejjy Inc. and other NC providers serve a wide range of industries:

Industry	BIM Clash Detection Application
Healthcare & Life Sciences	NC's world-class medical centers, hospital expansions, and pharmaceutical facilities require the highest levels of MEP coordination, where clash detection is mission-critical. Tejjy Inc. has deep experience in active-facility healthcare BIM coordination.
Education & Universities	UNC System, Duke, NC State, and hundreds of K-12 districts regularly invest in campus construction where BIM coordination reduces project costs and improves delivery outcomes.
Data Centers	The Research Triangle has become a major data center hub; these highly technical facilities have extremely complex MEP systems requiring intensive clash detection and precise coordination.
Commercial & Mixed-Use	Charlotte and Raleigh's booming commercial real estate markets drive demand for efficient BIM coordination on office towers and mixed-use developments.
Transportation & Infrastructure	NCDOT projects, airport expansions (CLT, RDU), and transit initiatives increasingly require BIM and clash detection for complex civil-MEP interfaces.
Industrial & Manufacturing	NC's manufacturing renaissance, including EV and semiconductor facilities, demands rigorous multi-discipline coordination for complex process plants.
Government & Military	Federal and state government buildings and military installations on NC bases (Fort Liberty, Camp Lejeune) require BIM for large-scale, federally compliant projects — Tejjy's 8(a) certification makes them an ideal partner.

9. Selecting the Right BIM Provider in NC

Choosing the right BIM clash detection service provider in North Carolina requires evaluating several critical factors. Tejjy Inc. — with its ISO-certified workflows, 8(a) certification, and 19+ years of experience — exemplifies the capabilities project teams should look for:

1. **Technical Capability**

   Verify software proficiency (Navisworks, Revit, BIM 360). Tejjy Inc. delivers in Revit, IFC, DWG, and PDF formats for maximum compatibility.

2. **Industry Experience**

   Prioritize providers with sector-specific experience. Tejjy's portfolio spans healthcare, institutional, commercial, and infrastructure projects across NC.

3. **Certifications & Compliance**

   Look for quality-certified firms. Tejjy holds ISO 9001:2015 certification and 8(a)/WOSB status — ensuring auditable, repeatable workflows.

4. **Communication & Reporting**

   Evaluate clash reporting platforms and coordination meeting facilitation. Tejjy provides structured clash reports compatible with all major PM platforms.

5. **Local NC Knowledge**

   Providers familiar with NC building codes, AHJ requirements, and NCDOT standards offer significant project advantages.

6. **Pricing & Scope Clarity**

   Understand whether pricing is project-based, hourly, or subscription. Always request a detailed scope including coordination meeting frequency and clash run cycles.

10. Regulatory & Compliance Considerations in NC

NC State Building Code

North Carolina follows the NC State Building Code, based on the IBC. BIM clash detection must account for code-required clearances, ADA accessibility, and life safety systems coordination.

NC DHSR Requirements

Healthcare facilities must comply with DHSR requirements governing hospital construction — heavily impacting MEP coordination and clash detection priorities.

LEED & Sustainability

Many NC public projects and private developments pursue LEED certification, requiring BIM coordination to support sustainable MEP design and energy modeling integration.

AGC BIMForum LOD Specification

The LOD Specification is widely adopted in NC, defining minimum modeling requirements for each building system at each project phase.

AIA Contract Documents

AIA E203 and G202 are increasingly used on NC projects to define BIM ownership, responsibilities, and clash detection requirements contractually.

NCDOT BIM Standards

The NC Department of Transportation has issued guidance on BIM adoption for roadway, bridge, and utility projects.

11. Cost Considerations & ROI

Understanding the cost structure of BIM clash detection services in North Carolina is essential for budgeting and justifying the investment. Tejjy Inc. offers competitive, scope-based pricing aligned with NC market standards:

Service Type	Typical Range (NC Market)	Notes
Basic Clash Detection Report	$2,500 – $8,000	Single discipline review; small to medium projects
Full MEP Coordination Package	$15,000 – $75,000+	Multi-discipline; includes coordination meetings
4D BIM Simulation	$8,000 – $30,000	Based on project complexity and schedule detail
Ongoing Coordination (Monthly)	$5,000 – $20,000/month	Construction phase support; varies by project size
BIM Execution Plan Development	$3,000 – $10,000	One-time fee at project outset

ROI Evidence: Industry research consistently finds that BIM clash detection delivers $15–$40 in savings for every $1 invested. For a $50M hospital project in NC, this can translate to $2–5M in avoided costs — making providers like Tejjy Inc. a high-value preconstruction investment.

12. Future Trends in BIM Clash Detection

The BIM clash detection landscape in North Carolina is evolving rapidly. Forward-looking providers like Tejjy Inc. are actively investing in next-generation capabilities:

■ AI-Powered Clash Detection

Machine learning algorithms are beginning to predict likely clash locations and suggest automated resolutions — dramatically reducing coordination meeting time.

■ Real-Time Cloud Coordination

Platforms like Autodesk Construction Cloud enable real-time, continuous clash detection as models are updated, replacing scheduled batch runs.

■ Digital Twin Integration

NC's smart building initiatives are driving integration of BIM coordination models with operational digital twins for facility lifecycle management.

■ Generative Design for Clash Avoidance

AI-driven generative design tools automatically route MEP systems to avoid clashes upstream in the design process.

■ AR/VR Clash Review

Augmented and virtual reality platforms allow project teams to walk through federated BIM models in immersive environments for intuitive clash identification.

■ OpenBIM & IFC Standardization

Growing adoption of IFC 4.3 and BCF 3.0 improves interoperability between software platforms — a focus area for Tejjy Inc.'s delivery workflows.

13. Conclusion

North Carolina's construction industry is at the forefront of BIM adoption in the southeastern United States, driven by large-scale investments in healthcare, technology, education, and infrastructure. BIM clash detection has become a non-negotiable service for projects seeking to control costs, meet schedules, and deliver high-quality facilities.

Among the growing ecosystem of NC BIM service providers, Tejjy Inc. stands out as a proven, certified partner with 19+ years of BIM delivery experience, ISO 9001:2015 quality systems, and a comprehensive suite of clash detection and coordination services. Their point cloud to BIM workflows, MEP coordination expertise, and 4D/5D BIM capabilities make them a top choice for complex NC construction projects — from active healthcare renovations to large-scale institutional campuses.

As BIM technology continues to evolve with AI integration, real-time cloud coordination, and digital twin connectivity, NC-based providers like Tejjy Inc. are investing in capabilities that will define the next generation of construction coordination.

TEJJY
ENGINEERING DESIGN SOLUTIONS

Ready to start your NC BIM project?
Tejjy Inc. delivers clash detection, MEP coordination, Scan-to-BIM, and full-lifecycle BIM services across North Carolina.
www.tejjy.com

This guide is intended for informational purposes only. Provider capabilities, pricing, and market conditions may vary. Always conduct thorough due diligence when selecting a BIM service provider for your specific project requirements. | www.tejjy.com